A CLINICAL STUDY ON VULVAR DISEASES AMONG SYMPTOMATIC PATIENTS ATTENDING GYNAEC OP IN THE INSTITUTE OF OBSTETRICS AND GYNAECOLOGY, CHENNAI.

Dissertation Submitted To

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY

In Partial Fulfillment for the Degree of

MASTER OF OBSTETRICS AND GYNAECOLOGY

BRANCH II

INSTITUTE OF OBSTETRICS AND GYNAECOLOGY

MADRAS MEDICAL COLLEGE

CHENNAI – 600 003.

APRIL 2012

CERTIFICATE

This is to certify that the dissertation entitled **"A CLINICAL STUDY ON VULVAR DISEASES AMONG SYMPTOMATIC PATIENTS ATTENDING GYNAEC OP IN THE INSTITUTE OF OBSTETRICS AND GYNAECOLOGY"** done by Dr. D.SAKTHI NARMATHA, to the faculty of Obstetrics and Gynaecology, the Tamil Nadu Dr.M.G.R.Medical University, Chennai in partial fulfillment for the award of M.D.Degree (Obstetrics and Gynaecology) is a bonafide research work carried out by her under our direct supervision and guidance.

Prof. Dr.V.KANAGASABAI M.D.
Dean,
Madras Medical College,
Chennai - 600 003.

Prof. Dr.M.MOHANAMBAL M.D. DGO.
Director and Superintendent,
Institute of Obstetrics & Gynaecology,
Madras Medical College,
Chennai – 600 003.

Prof. Dr. K. RUKMANI M.D. DGO,
Guide,
Institute of Obstetrics & Gynaecology,
Madras Medical College,
Chennai – 600 003

DECLARATION

I hereby declare that the study entitled **A CLINICAL STUDY ON VULVAR DISEASES AMONG SYMPTOMATIC PATIENTS ATTENDING GYNAEC OP IN THE INSTITUTE OF OBSTETRICS AND GYNAECOLOGY** was done by me in the Institute of Obstetrics and Gynaecology (IOG), Madras Medical College, Chennai–600 003.

This Dissertation to The TamilNadu Dr.M.G.R. Medical University is in partial fulfillment of University regulations for the award of MD Degree in Obstetrics and Gynaecology.

Place :

Date :

Dr. D.SAKTHI NARMATHA
M.D. PG (Obstetrics and Gynaecology)
Institute of Obstetrics and Gynaecology
Madras Medical College,
Chennai-600 003.

Prof. Dr. K. RUKMANI M.D. DGO,
Guide,
Institute of Obstetrics & Gynaecology,
Madras Medical College,
Chennai – 600 003

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI -3

Telephone No: 04425305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Dr. D. Sakthi Narmatha
PG in MD Obstetric & Gynaecology
Egmore , Ch-8

Dear Dr. D. Sakthi Narmatha

The Institutional Ethics Committee of Madras Medical College reviewed and discussed your application for approval of the proposal entitled " A clinical study on vulvar diseases among symptomatic patients attending gynaec op in Institute of Obstetrics & Gynaecology , Chennai" No. 14012011.

The following members of Ethics Committee were present in the meeting held on 28.01.2011 conducted at Madras Medical College, Chennai -3.

1. Prof. S.K. Rajan, MD	– Chairperson
2. Prof. A. Sundaram, MD Dean i/c , Madras Medical College, Chennai -3	– Member Secretary
3. Prof R. Sathianathan Director , Institute of Psychiatry, MMC,Ch-3	– Member
4. Prof R. Nandhini, MD Director, Institute of Pharmacology, MMC, Ch-3	– Member
5. Prof. Geetha Subramanian, MD,DM Prof. & Head , Dept. of Cardiology, MMC, Ch-3	– Member
6. Prof. Md. Ali, MD, DM Professor & Head ,,Dept. of MGE, MMC, Ch-3	– Member
7. Thiru. T.S. Bharathidasan Administrative Officer, MMC, Chennai -3	– Layperson
8. Thiru. S. Govindasamy . BA.BL	– Lawyer
9. Tmt. Arnold Soulina	– Social Scientist

We approve the Proposal to be conducted in its presented form.

Sd /. Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information / informed consent and asks to be provided a copy of the final report

Member Secretary, Ethics Committee

ACKNOWLEDGEMENT

I gratefully acknowledge and sincerely thank **Prof. Dr. V. KANAGASABAI M.D, Dean ,** Madras Medical College, Chennai, for granting me the permission to do the dissertation.

I am grateful to **Prof Dr. M. MOHANAMBAL MD DGO**, **Director and Superintendent** of the Institute of Obstetrics and Gynaecology, Madras Medical College for providing me necessary facilities to do this project.

I am greatly indebted to **Prof. Dr. T.RADHABAI PRABU MDDGO,MNAMS,FRCS,FRCOG,PhD.** Former Director and Superintendent of Institute of Obstetrics and Gynaecology, Madras Medical college for giving me constant support and guidance to carry out the project successfully.

I am very much thankful to **Prof. Dr. K. RUKMANI MD DGO.,** for guiding me in the study and for the successful completion of the dissertation.

I thank **Prof. Dr. K. JAYASHREE SRINIVASAN MD DGO, DNB** for her valuable assistance and timely advice during my study.

My deep gratitude to **Asst. Dr. KAVITHA SUKUMAR MD OG,** who showed great interest and gave much of her valuable time providing me colposcopic reports.

I sincerely thank **Prof. Dr. M.P. KANCHANA M.D** Chief pathologist, Institute of Obstetrics and Gynaecology for providing histopathological reports which were of immense help in the study.

I thank Prof**. Dr. K. KALAICHELVI MD., DM,** Chief Medical Oncologist, Department of Medical Oncology, Institute of Obstetrics and Gynaecology for her valuable assistance in my study.

I also thank **Prof. Dr. K. VIJAYALAKSHMI MD RT,** Chief of Department of Radiotherapy, Institute of Obstetrics and Gynaecology for helping me in the study.

I wish to thank Dr. R. RAVANAN MSc., M.Phil.,PhD., Statistician for his help during this study

My deepest thanks to all my Unit Chiefs, Assistant Professors and all my colleagues for their great support helping me complete the dissertation.

I also thank all the patients who participated in the study for their patience and co- operation.

And finally I express my gratitude to my husband and family and my friends for their encouragement and helping me all the way through.

CONTENTS

INTRODUCTION

INTRODUCTION

Vulvar problems account for a significant number of patients attending gynecological clinics. Vulvar diseases can affect any age group. Too commonly the vulvar disorders are missed and any changes in the normal anatomy are not recognized. Many women do not seek medical advice due to embarrassment and social factors.

Vulvar carcinoma continues to rise in incidence in recent years. Therefore attempts to reduce this cancer must focus on identifying precursor conditions like vulval intraepithelial neoplasia, lichen sclerosus and other dystrophies which could progress to malignancy if left untreated.

The scope of this study is to evaluate the various vulvar diseases encountered among the symptomatic patients attending the gynecological OPD at our institute, a tertiary care center.

AIMS OF THE STUDY

AIM OF THE STUDY

1. To evaluate the vulvar diseases among the symptomatic patients attending gynecological outpatient department at the Institute of Obstetrics and Gynaecology, Chennai.

2. To study the epidemiology of the various vulvar diseases including the socio-demographic factors, age distribution, clinical features and histo-pathological features among the women included in the study.

MATERIALS & METHODS

MATERIALS AND METHODS

NATURE OF THE STUDY:

This study is an observational clinical study conducted on symptomatic women attending gynecological clinics at the Institute of Obstetrics and Gynaecology, Chennai.

Women who are 30 years of age and above and who presented with symptoms related to vulvar diseases like pruritus, pain, mass or ulcers in the vulva are the subjects of this study. 89 cases who fulfilled the above criteria and who consented to participate in this study are the subjects included.

STUDY PERIOD:

The study period is from May 2010 to April 2011 (one year period).

STUDY SETTING:

The Institute of Obstetrics and Gynaecology, Chennai.

ETHICAL CLEARANCE:

Ethical committee clearance obtained

CONSENT:

An informed consent obtained from all patients participating in the study.

SUBJECTS:

INCLUSION CRITERIA:

- Women of age 30 years and above.
- Patients with complaints of pruritus vulva.
- Patients with pain in the vulval region.
- Patients with mass or ulcer in the vulva.

EXCLUSION CRITERIA:

- Women under the age of 30 years.
- Pregnant women.

SAMPLE SIZE **:** 89 cases.

SAMPLING TECHNIQUE **:** Purposive sampling

COLLABORATING UNITS:

- Dept of Pathology,IOG
- Dept of Medical Oncology,IOG
- STI clinic,IOG
- Colposcopy clinic,IOG

METHODOLOGY

Good management begins with a tailored history. Hence all the participants in the study are interviewed using a well- structured proforma. After getting an informed consent regarding their willingness to participate in the study, a detailed history is obtained including vital information on socio-demographic details, educational status, menstrual, marital, obstetric history, relevant past history, family and personal history including sexual history.

The patients are subjected to examination including general, systemic and local examination of the vulva. With the patient in dorsal position the external genitalia is examined for any abnormalities in colour, shape or texture of the vulvar region. A speculum examination done using Sim's metallic speculum and any associated cervical or vaginal lesions noted. Papanicolaou smear taken using a wooden Ayre's spatula with a 360 degree sweep at the squamo- columnar junction of the cervix. The material so obtained is spread on a glass slide before it is air-dried and fixed with 95% ethanol and later stained. Potassium hydroxide smears using scrapings from the vulvar skin in all patients with symptoms of pruritus with associated white discharge. The smears were subjected to microscopic examination.

Careful bimanual examination and a per-rectal examination done in all patients to rule out any associated pelvic pathology. Blood sugar tests done in all patients to rule out diabetes.

COLPOSCOPY OF VULVA (VULVOSCOPY)

A colposcope is a low-power binocular microscope with a focal length of approximately 20-30 cm with a co-axial light source focus for optimal vision. Developed in 1925, it is now well used in clinical practice for defining and delineating abnormal lesions of the cervix and also the vulva.

With the patient in dorsal position a Cusco's self retaining metallic speculum is introduced. The cervix and vagina visualized for evidence of any abnormalities like growth after applying 3% acetic acid for 3 minutes followed by Lugol's iodine. Biopsy taken from any aceto-white iodine-negative suspicious areas. Vulvoscopy then performed by swabbing the whole vulva liberally with 3% acetic acid for 5 minutes. The vulva is systematically examined from the introitus outwards to labia minora, majora, perineum, peri-anal region and finally the clitoris. Any abnormal aceto- white areas, changes in surface contour or angioarchitecture are noted for biopsy.

VULVAL BIOPSY:

The most important method of evaluating vulvar lesions is the histo-pathological examination of the biopsy specimen.Abnormal aceto-white areas, mosaic pattern, punctuations, raised surface contour are ideal sites for biopsy. Approximately 10 minutes before biopsy about 10 ml of 1% lignocaine solution is infiltrated for local anaesthesia. The skin is prepared with povidone-iodine solution. The skin at the biopsy site is elevated with Allis forceps and a scalpel is used to sever the base of the skin and a disc- shaped sample of skin is obtained, sent in a labeled formalin containing container. The skin edges are sutured with 1-0 catgut.

The histo-pathological reports are analysed. High risk patients are identified and treated and motivated for regular follow-up by creating awareness regarding cancer screening.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

The study of vulvar diseases has become important over the last few decades. The vulva is the part of the female external genital tract located between the genitor-crural folds laterally, mons pubis anteriorly and the anus posteriorly.

It is composed of the vestibule, the clitoris, labia minora , labia majora and the mons pubis. Embryological uniqueness of the vulva is that it arises from all the 3 germ layers namely the urogenital ectoderm, the paramesonephric mesoderm and the cloacal endoderm. The epithelium is highly variable ranging from non-keratinized squamous epithelium to the keratinized epithelium associated with hair follicles and apocrine glands.

VULVAL INFECTIONS:

Although the stratified squamous epithelium and the acidic secretions of the apocrine glands provide an effective defense mechanisms, infections can affect the vulvar skin or structures in the vulva like Bartholin's, sebaceous, sweat glands.

VULVAL CANDIDIASIS:

Vulvovaginal candidiasis (VVC) is an extremely common infection in women of childbearing age of all strata of society. It is estimated that about 75% of women will experience this infection at least once during their life time. Over 85% of cases are caused by Candida albicans, while Candida tropicalis and glabrata are more common in diabetic women. Often seen in patients with altered immune system like HIV infection, uncontrolled diabetes, steroids and frequent antibiotic therapy.

Patients present with intense pruritus associated with curdy white discharge p/v. The vulva is erythematous or may show white adherent film or discolouration. Potassium hydroxide smears show the presence of pseudohyphae. Treatment is oral or topical antifungals.

Sobel JD *et al* reported that it has now been excluded from the ranks of sexually transmitted diseases and is also not a notifiable disease. In 15% of these cases the mycotic infection may evolve in a "cyclic recurrent type" (RVC) defined as four or more episodes of mycotic vulvovaginitis during one year[18].

An epidemiological study of vulvovaginal candidiasis in women of childbearing age conducted in India in 2007 N.Jindal *et al* reported out of 350 women of 16-45 years of age, with the complaints of vaginal discharge and/or vaginal itching positive culture for *Candida* species was obtained in 82 (23.4%) women. Of these, 61 (74.4%) were *Candida albicans* and 21 (25.6%) were non *C . albicans. There was a* consistent increase in the incidence of VVC from second to fourth decade of life followed by a decline. This could be because of the influence of sexual activity. The study showed that women of low socioeconomic status, unsatisfactory genital hygiene and those who were using tight, poorly ventilated, nylon underclothing showed significantly higher incidence of VVC than those of middle class[19].

CONDYLOMA ACUMINATUM/ VULVAL WARTS:

It is a cutaneous benign neoplasm caused by Human Papilloma virus types 6, 11. It typically has a verrucous, papillary or sessile appearance and exhibits viral HPV cytopathological effects. It is widespread in immunocompromised patients.

In a study on a correlative analysis of cervical lesions in patients with vulva condyloma acuminatum Qing Li *et al* reported that out of 418 cases of vulval condylomata studied from May 2002 to April 2004 high-risk HPV (+) infections were detected in 68.7% (287/418) of the cases. Among those patients, 20.6% (59/287) had concurrent subclinical cervical intraepithelial neoplastic (CIN) lesions. Among the high-risk HPV(−) 31.3% (131), patients 7.6% (10/131) had concurrent subclinical CIN lesions [21] .The patients are at high-risk for CIN and cervical cancer. We must pay more attention to the cervix in cases with vulva condyloma acuminatum.

Clinical examination is sufficient to diagnose most external genital warts Biopsy is seldom necessary to accurately diagnose visible genital warts. Detection and typing of HPV are not currently recommended for diagnosis or management of external genital warts.

Scissors or scalpel excision is best mode of treatment when a tissue specimen to be submitted for histopathological examination is needed to rule out malignancy.

A.Ferenczy reported **t**he therapeutic effectiveness of the carbon dioxide laser was evaluated in 55 women with condylomata acuminata of the vulva but also of the urethral meatus and anal region and in 11 women with multicentric vulvar intraepidermal neoplasia. The rates of persistence and recurrence were only 13% and 5% respectively for condylomata and were both 9% for intraepidermal neoplasia[22].

Other rare infections which may affect the vulva includes VULVITIS due to sexually transmitted infections like Gonorrhoea, Syphilis, Chancroid,Lymphogranuloma Venereum, Granuloma inguinale and viral infections like Herpes genitalis, Herpes zoster, Molluscum contagiosum and rarely due to parasitic infestations like Pediculosis, Scabies.

INFLAMMATORY VULVAL DYSTROPHIES:

LICHEN SCLEROSUS:

In 1887, Hallopean first described lichen sclerosus and used the term lichen plan sclereus. The exact etiology is still unknown. It is associated with other autoimmune disorders like vitiligo, thyroiditis, and alopecia. Histologically, it is characterized by hyperkeratosis, thinning of dermis. There is mounting evidence to suggest that autoimmune mechanisms are involved in its pathogenesis.

LS in females has two peak ages of presentation. The first of these occurs in prepubertal girls and may resolve or continue beyond the menarche. The other peak of incidence is in postmenopausal women although this suggests a hormonal influence.

In a clinical study of 26 cases of lichen sclerosus by Singh *et al* between 2005-2007, the mean age was 44 years and the median duration 2.5 years (2 weeks to 40 years)[1].

There is a 4-5% risk of developing squamous cell carcinoma in patients with lichen sclerosus. However, histopathological examination of vulvar SCCs indicates that about 60% occur on a background of LS. A clinical study of anogenital SCC presenting to a vulvar clinic demonstrated that 14 of 23 cases occurred on a background of LS[23].

Topical corticosteroids are considered the treatment of choice for this condition. Recently, nonsteroidal immunomodulatory topical calcineurin inhibitors (TCIs) have been increasingly used in the management of genital LS according to Meffert JJ Davis *et al*[16].

Patients treated with topical steroids 0.05% clobetasol propionate. In a series of 81 women Lorenz and coworkers reported 77% complete remission after treatment with topical steroids.

In a study on LS, Cooper et al found out of a total of 327 women and girls with the typical clinical features of LS four women developed vulvar intraepithelial neoplasia alone, 6 developed squamous cell carcinomas (SCCs) alone, and 1 developed an SCC on a grade 3 vulvar intraepithelial neoplasia. The mean age at diagnosis of the SCCs was 63.8 years (range, 39-82 years) and the mean duration of vulvar symptoms before diagnosis of an SCC was 30.8 years (range, 0-44 years)[24].

In a study on Non-neoplastic disorders of the vulva in 2008, Andrew. T. Goldstein *et al* found that the increased risk of developing squamous cell carcinoma is approximately 5 percent in patients with lichen sclerosus[25]. Patients with lichen sclerosus are also at a higher risk for autoimmune disorders and should be screened appropriately.

LICHEN SIMPLEX CHRONICUS:

It is the end stage of chronic itch-scratch-itch cycle. Intense chronic pruritus results in repetitive scratching and thickening of skin called LICHENIFICATION. It may co-exist with other chronic dermatosis like lichen sclerosus. Also known as neurodermatitis, pruritus vulvae, squamous hyperplasia, and hyperplastic dystrophy. The etiology of the initiating pruritus that leads to LSC includes numerous irritative and infectious disorders including candidiasis, atopic dermatitis, contact dermatitis, and eczema.

Biopsy shows prominent acanthosis with deepening of rete pegs with hyperkeratosis without atypia. Treatment includes breaking the itch-scratch-itch cycle by antihistaminics and topical steroids.

In a study on pattern of non-venereal dermatosis of female genital tract in South India by Singh *et al* in 2008 out of 120 patients in the study 16 had lichen simplex chronicus (13.3%) with a mean age of 49.9 years and a median duration of 2 years of itching[2].

LICHEN PLANUS:

Lichen planus is a heterogenous condition affecting the skin and mucous membranes anywhere in the body. Erosive LP which affects mucous membranes of vulva and vagina whereas cutaneous LP has a classical violaceous flat-topped papules on the trunk and non-mucosal areas of genitalia. Etiology is unknown however autoimmunity plays a role in pathogenesis. LP affects approximately 1% of all women, most commonly on the oral mucosa. Approximately 25% of women with oral LP also have vulvovaginal involvement the peak incidence ranges from ages 30 to 60 years. The true incidence of LP is difficult to assess.

Advanced stages of disease produce scarring, adhesions and introital narrowing. Biopsy shows band-like lymphocytic infiltration at the dermo-epidermal junction with saw-toothed rete ridges.

Kingston *et al* recommended topical steroids as first line. Surgery for scarring and reversal of sexual function is needed for young women. Like lichen sclerosus, non-healing erosive LP can progress to squamous cell carcinoma[4].

Kennedy *et al* a retrospective study of 113 women with erosive vulvar LP only one case developed subsequent vulvar cancer however estimating the risk was difficult due to low prevalence of the disease. The mean age at presentation for women with lichen planus was 50 years. The potential for malignant transformation in vulvovaginal LP is not well known. Oral LP is clearly associated with increased risk of squamous cell carcinoma and several case reports have suggested that the same association holds true for vulvovaginal LP[17].

In a series of 61 patients with vulvar carcinoma by Andrew. T. Goldstein, 3 were found to have the histologically confirmed LP adjacent to the vulvar tumor. Current recommendations encourage regular vulvovaginal examinations in patients with lichen planus and biopsy of any suspicious lesions[26].

BENIGN CYSTS OF VULVA

BARTHOLIN'S CYST:

These are the most common cystic growths in the vulva. 2% of women develop this condition at sometime in life more common in the reproductive age group. It carries low risk of bartholin gland carcinoma 0.114 Ca per 100000 women years[9]. Excision biopsy is needed only for postmenopausal women to rule out adenocarcinoma. Treatment of cyst includes marsupialization/incision and drainage. Bartholin gland abscess is 3 times more common than cysts. They are polymicrobial in origin and hence treated with incision and drainage under broad spectrum antibiotic coverage. Recurrence occurs in 10-15% of cases[30].

Bartholin's abscess I & D done

LIPOMA:

Lipoma is a benign tumor occurring in the vulva that is composed of primarily fat cells (adipocytes). Can occur in all age groups. It presents as a soft well-defined mass with normal overlying skin. Histology composed of mature fat cells with strands of fibrovascular tissue. Treated with excision in symptomatic patients.

MUCOUS CYSTS OF VULVA:

These are benign cystic dilatation of minor vestibular glands in the introitus lined by mucous secreting columnar epithelium and contains typical mucoid material.Treatment is excision.

LEIOMYOMA OF VULVA:

It is a rare smooth muscle tumor arising from the smooth muscles of blood vessels,erectile tissue, skin and from the smooth muscles of the erector pili. Patient presents as a mobile firm to soft mass. Histology composed of spindle-shaped smooth

muscle cells arranged in interlacing bundles. Treatment is surgical excision to rule out malignancy.

OTHER RARE BENIGN CYSTIC OR SOLID VULVAR LESIONS include hemangioma, acrochordon, hidradenoma, Skene duct cysts, vulvar hematoma, fibroma.

VIN (VULVAR INTRAEPITHELIAL NEOPLASIA):

VIN is a proliferative intraepithelial squamous process associated with HPV infection, characterized by abnormal epithelial maturation, nuclear enlargement and nuclear atypia. It is categorized into VIN I (mild dysplasia), VIN II (moderate dysplasia) and VIN III (severe dysplasia).The term VIN has replaced the terms Bowen's disease, Erythroplasia of Queyret, Bowenoid papulosis.

The BETHESDA system terminology "low grade" and "high grade"is applied to VIN I and VIN II/VIN III respectively. But as per the latest ISSVD classification in 2004 the term VIN I is thought to be secondary to HPV infection and they combined VIN II &VIN III as simply VIN.

Histologically, there are two types of VIN namely, CLASSICAL VIN (basaloid and warty subtypes) and UNDIFFERENTIATED VIN (simplex). Classical VIN is multifocal, multicentric, HPV related, occurring in young women whereas, the poorly differentiated form of VIN are unifocal, unrelated to HPV and are linked to chronic itch-scratch-itch cycle associated with squamous cell hyperplasia, lichen sclerosus, lichen simplex chronicus.

Basta *et al* in a study of 293 women of VIN aged between 23-76 years an increased frequency of VIN in young women has been observed for the past 15 years. In a group <45 years of age, those lesions were multifocal in 43 cases (63.2%) and unifocal in 25 patients (36.8%).And in the group of >45 years multifocal in 35 cases (31.8%) and unifocal in 75 cases (68.2%) [15].

JONES *et al* in a study of 405 cases of VIN II-III between 1962-2003 reported a progression to malignancy occurred in 10 out of 16 untreated cases with a mean duration of 3.9 years. Spontaneous regression occurred in 47 cases (11.6%) with a median duration of 9.5 months. He also reported a decrease in mean age from 50 in 1980 to 39 in 2003 due to increased HPV prevalence[28]. The classical forms best treated by excision or ablation and the simplex forms respond well to topical steroids.

The development of undifferentiated VIN and vulvar SCC mirrors that of cervical intraepithelial neoplasia (CIN) and cervical SCC, the latter caused by high-risk human papilloma virus in nearly 100% of the cases. Multicentric HPV infections affecting vulva, cervix, vagina and anus simultaneously have been described making a thorough examination of the entire lower female anogenital tract obligatory.

VULVAR CANCER:

Vulvar cancer accounts for about 3 - 5 % of cancers of the female genital tract and 0.6% of all cancers in women. In the United States, women have a 1 in 406 chance of developing vulvar cancer at some point during their life. The American Cancer Society's most recent estimates for vulvar cancer in the United States are for 2011[27]:

- About 4,340 cancers of the vulva will be diagnosed
- About 940 women will die of this cancer[27].

The majority of vulvar carcinomas are squamous cell ca carcinomas (90%) followed by melanomas, adenocarcinomas, basal cell carcinomas and sarcomas. Verrucous carcinoma, a subtype of invasive squamous cell vulvar cancer, appears as cauliflower-like growths similar to genital warts. According to WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre) and Human Papillomavirus and Related Cancers in India September 2010 Updates, worldwide, about 60% of all vulvar cancer cases occur in developed countries, indicating the limited impact of cervical screening programmes to prevent vulvar and vaginal cancers. Vulvar cancer is common in older women with approximately 66% of cases diagnosed at or above 70 years.

Incidence of vulvar cancer by cancer registry in India

Cancer registry	**Period**	**N cases**	**Crude rate**	**ASR**
Chennai	1998-2002	53	0.5	0.6
Karunagappally	1998-2002	1	0.1	0.1
Mumbai	1998-2002	65	0.2	0.3
Nagpur	1998-2002	28	0.6	0.7
New Delhi	1998-2002	82	0.3	0.5
Poona	1998-2002	8	0.1	0.1
Trivandrum	1998-2002	10	0.3	0.3

(ASR: Age-standardized rate. Standardized rates have been estimated using the direct method and the World population as the reference.

1. Accumulated number of cases during the period
2. Rates per 100,000 women per year)

Regarding studies on HPV prevalence among cases of vulvar cancer in India no data available yet.

A study on review of 56 patients younger than 45 years who were diagnosed with vulvar squamous cell carcinoma between 1994 and 2006 found that median age was 38 years. Of patients with advanced disease, 53.3% were smokers, 40% had human papillomavirus (HPV) exposure, 46.7% had a history of vulvar intraepithelial neoplasia (VIN) and 6.7% were immunocompromised. Symptoms were present for more than 12 months in 47%, but symptom duration did not correlate with stage (P = .42) or positive lymph nodes (P = .28). Young women with vulvar cancer tend to have early-stage disease, smoke, have a history of HPV and have VIN[28].

The epidemiological pattern of cancer vulva is changing over the past 2 decades. JUDSON et al reviewed 13,176 in situ and invasive vulvar carcinomas from the Surveillance, Epidemiology and End-Results (SEER) program database over a 28-year period (1973-2000); 57% of cases were in situ. There was a 411% increase in the incidence of in situ carcinomas during 1973-2000 until the age of 40-49 years due to changing sexual behavior, smoking, HPV infection while the incidence of invasive cancer increased 20% during the same period especially after the age of 50 years[29].

ETIOLOGY:

No specific etiological factor has been identified for vulvar cancer. Epidemiological evidence to date suggests that there are two different etiologic paths at work in vulvar carcinogenesis.

- The keratinizing type is seen in women older than 50 years of age, associated with non-neoplastic epithelial disorders like chronic inflammation or lichen sclerosus. They tend to be unifocal and not HPV related.
- The basaloid or warty type is often seen in women under the age of 50 years and is associated with HPV infection, VIN and smoking.

RISK FACTOR ANALYSIS:

The epidemiological risk factors for cancer vulva are similar to those of cervical cancer like HPV infection, condylomata, higher no. of sexual partners, smoking, tobacco use, sexually transmitted diseases, immunosuppression, VIN and other vulval dermatoses like lichen sclerosus. The risk of vulvar cancer goes up as women age. Less than 20% of cases are in women younger than age 50, and more than half occur in women over age 70. The average age of women diagnosed with invasive vulvar cancer is 70 years.

Two types of HPV, HPV 6 and HPV 11, cause most cases of genital warts. These 2 types are seldom linked to cancer, and so are called *low-risk* types of HPV. However, other HPV types have been linked with oral, anal, and genital cancers and are known as *high-risk* types of HPV. These include HPV 16, HPV 18, HPV 31 as

well as others. Infection with a high-risk HPV may produce no visible signs until pre-cancerous changes or cancer develops.

About half of all vulvar cancers are linked to infection with the high-risk HPV types. HPV linked vulvar cancer is more common in younger women and is seen less often in older women.

In a case series HPV DNA prevalence ranged from 72-100% among cases of high grade vulvar neoplasias (VIN III) and 27.3-100% among vulvar cancers(3.9-6.3% in keratinizing types). Similarly metaanalysis estimated a HPV prevalence of 76% for VIN and 36% for vulvar carcinomas.HPV 16 was the most common type detected (65-93% in VIN and 71% of vulvar cancers) followed by HPV18.

Smoking increases the risk of developing vulvar cancer. Among women who have a history of HPV infection, smoking further increases the risk of developing vulvar cancer.

HIV virus damages the body's immune system; it makes women more likely to get HPV and to stay infected with it. This may, in turn, increase the risk of vulvar pre-cancer and cancer.

Women with cervical cancer also have a higher risk of vulvar cancer. This is probably because these cancers share certain risk factors like HPV infection, smoking and tobacco abuse.

MOLECULAR RISK ASSESSMENT FOR VULVAR CANCER:

In a review by Knopp et al data from the Norwegian Radium Hospital showed that p16,p21,p14,p53,VEGF,EGFR,TGF-alpha are the pathological markers of disease progression and outcome. But due to lack of multivariate analysis in a majority of the studies, no conclusion regarding the prognostic value can be drawn. Tumour ploidy is an important prognostic factor. 5 –year crude survival rate was 62% for diploid and 23% for aneuploid tumours.

PREVENTION:

The risk of vulvar cancer can be reduced by avoiding certain risk factors and by treating pre-cancerous conditions before an invasive cancer develops. These steps cannot guarantee prevention but can greatly reduce your chances of developing vulvar cancer. Certain types of sexual behavior increase a woman's risk of getting a genital HPV infection, such as:

- Having sex at an early age
- Having many sexual partners
- Having a partner who has had many sex partners
- Having sex with uncircumcised males

Delaying sex until older enough can help to avoid HPV and reduces the risk of vulvar cancers.

A vaccine called Gardasil protects against infection with HPV subtypes 16 and 18 (as well as 6 and 11). In studies, this vaccine was found to prevent anal and genital warts caused by HPV types 6 and 11 and to prevent anal, vulvar, vaginal, and cervical cancers and pre-cancers caused by types 16 and 18. This vaccine can only be used to

prevent HPV infection and it does not help treat an existing infection. To be most effective, the vaccine should be given before a woman becomes sexually active. Cervarix, another HPV vaccine available can also be used to prevent infection with HPV types 16 and 18, but it prevents cervical cancers and pre-cancers and not any of the other cancers linked to HPV infection such as vulvar cancer.

There is no standard screening for this disease other than routine physical examinations.

Revolution that has occurred in the treatment of this disease. There is no other gynaecological cancer that has undergone so much change in management as vulvar cancer. After the pioneering work of TAUSSIG in United States and WAY in Great Britain, en bloc radical vulvectomy and bilateral dissection of groin and pelvic nodes using "Triple incision" technique is the standard treatment of operable vulvar cancers. The trend is towards individualization of treatment for all patients.

The primary vulvar lesion can be effectively treated by radical local excision thereby sparing the psychosexual consequences of radical vulvectomy in most patients with T1 tumors. Local recurrence occurs in up to 10% cases whether or not radical vulvectomy has been performed and can usually be effectively treated by further surgery and/or radiation. By contrast, recurrence in the groin is usually fatal, so any patient with a T1 lesion and more than 1 mm stromal invasion should have at least an ipsilateral inguinal-femoral lymphadenectomy performed. For advanced T2 and T3 tumors treatment is radical vulvectomy with inguino-femoral lymphadenectomy followed by closure of defects by skin grafts or chemoradiation.for advanced T3 and T4 disease pelvic exenteration in addition is performed. Postoperative groin and pelvic radiation should be given for patients with 3 or more

micrometastases in lymph nodes, one macrometastasis (10 mm diameter), or any evidence of extracapsular nodal spread. Chemotherapy with cisplatin, 5 FU is of limited value in the management of vulvar cancer.

The future role of sentinal node lymphatic mapping to decrease the morbidity associated with complete inguino-femoral lymphadenectomy awaits further investigation and trials[20].

Well differentiated squamous cell Ca vulva Stage II

Well differentiated squamous cell Ca vulva Stage III

RESULTS & ANALYSIS

RESULTS AND ANALYSIS

Type of vulvar disease	No. of cases
1. Infections	32
2. Inflammatory Diseases	33
3. Benign Cysts/Lesions	12
4. Premalignant & Malignant Lesions	12
Total Cases studied	**89**

INFECTIONS

- Vulval candidiasis 29
- Tinea Cruris 3

INFLAMMATORY DISEASES

- Leucoplakia 22
- Lichen Sclerosus 6
- Lichen simplex chronicus 3
- Lymphedema Vulva 1
- Post RT skin necrosis 1

BENIGN CYSTS/LESIONS

• Bartholin's Cyst/Abscess	7
• Vulval Hematoma	1
• Lipoma Vulva	1
• Vulval Warts	1
• Mucous Cyst	1
• Leiomyoma Vulva	1

MALIGNANT & PREMALIGNANT LESIONS

VIN	2
CARCINOMA VULVA	10
TOTAL NO. OF CASES STUDIED	**89**

Post radiation skin necrosis of vulva

Lymphedema of vulva

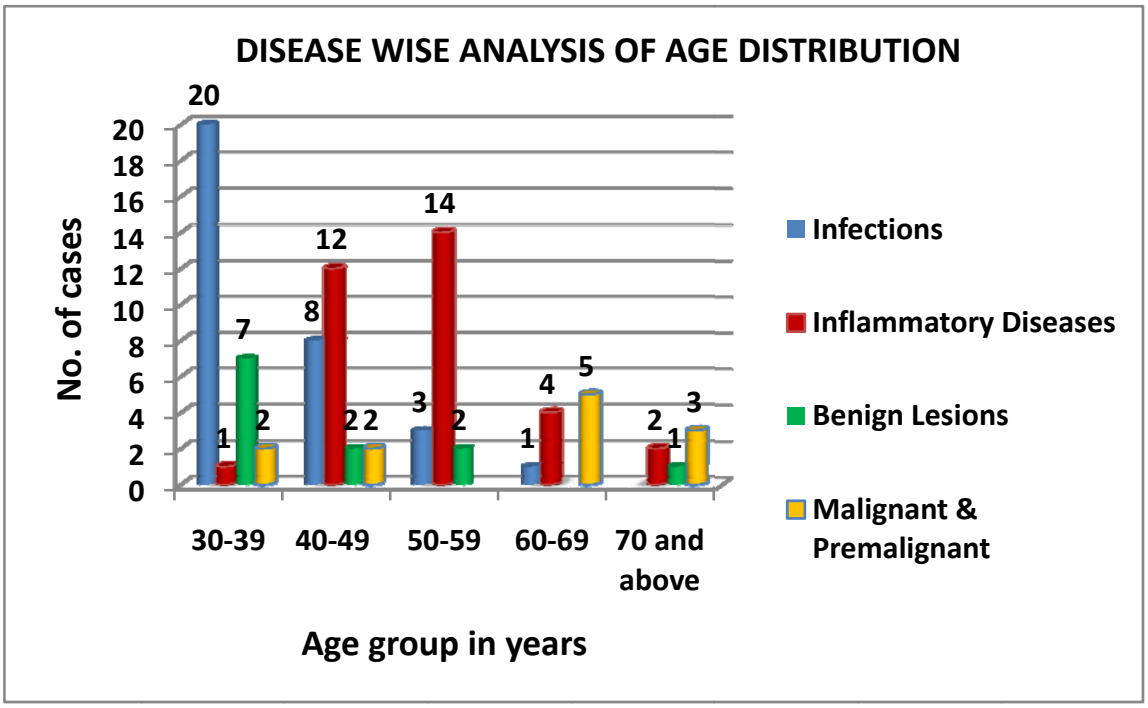
TABLE 1

AGE GROUP ANALYSIS OF PATIENTS

Age Group in years	Infections	Inflammatory Diseases	Benign Lesions	Malignant & Pre Malignant	Total No. of cases	P Value
30-39	**20(62.5%)**	1	**7 (58.3%)**	2	30	0.000 (<0.001) Highly Significant
40-49	8	**12 (36.4%)**	2	2	24	
50-59	3	**14(42.4%)**	2	….	19	
60-69	1	4	---	**5(41.7%)**	10	
70 & above	---	2	1	**3(25.0%)**	6	
Total No. Cases Disease Wise	32	33	12	12	**89**	

Out of 89 women in the study about 33.71% belonged to the age of 30-39 years. The youngest and oldest age encountered was 30 years and 75 years respectively. (Range: 30 -75) with median of 45 years.

CHART 1



About 62.5% (20 out of 30 cases) of 30 to 39 years had infections. The inflammatory diseases were common in the age groups of 40-49 (36.4%) and 50-59 (42.4%). Though benign lesions were common in the younger age group of 30-39 (7 out of 12 cases, 58.3%), the malignant and premalignant diseases occured more commonly in postmenopausal group (60-69 years 41.7% and ≥ 70 years 25%). The p value is 0.000 (<0.001) highly significant.

TABLE 2

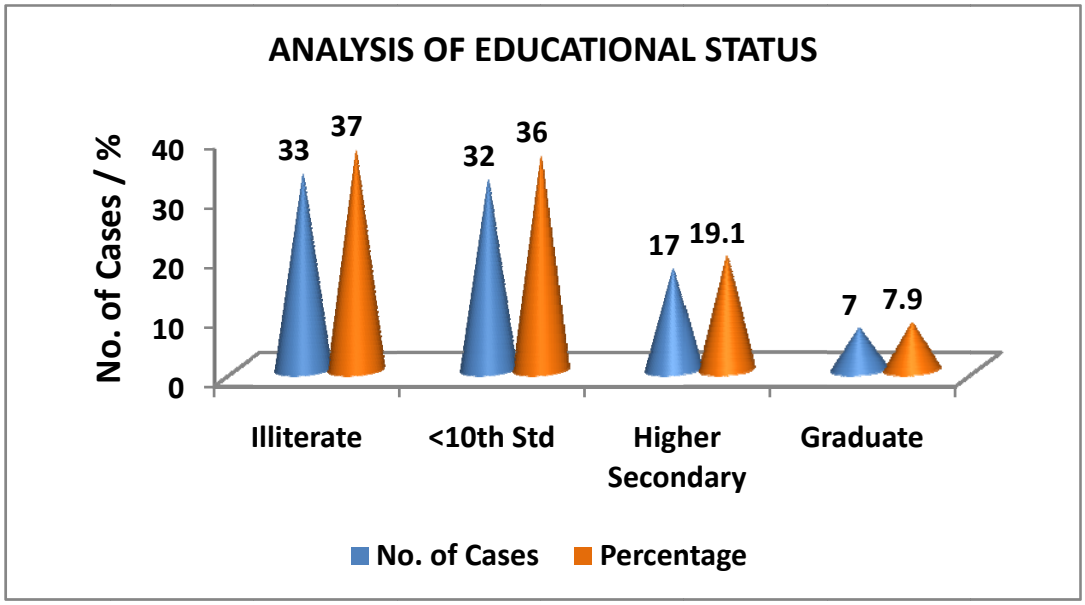
SOCIO ECONOMIC STATUS ANALYSIS

Monthly Income in Rs.	No. of Cases	%	p Value
< Rs.500	14	15.7	0.000 (<0.001 highly significant)
Rs.500 - 1000	22	24.7	
Rs.1000 - 1500	37	41.6	
Rs.1500 – 2000	12	13.5	
Rs.2000 & more	4	4.5	
TOTAL	89	100.0	

Majority of women belonged to the low income group of < Rs.1500 per month with 41.6% of cases in the range of Rs.1000 – 1500 per month. The p value of this observation is 0.000 (<0.001 highly significant).

CHART 2

ANALYSIS OF EDUCATIONAL STATUS



About 65 out 89 cases belong to the illiterate and <10th Std. group. (73%). This observation has a highly significant p value of 0.000 (<0.001).

TABLE 3

ANALYSIS OF MENSTRUAL STATUS

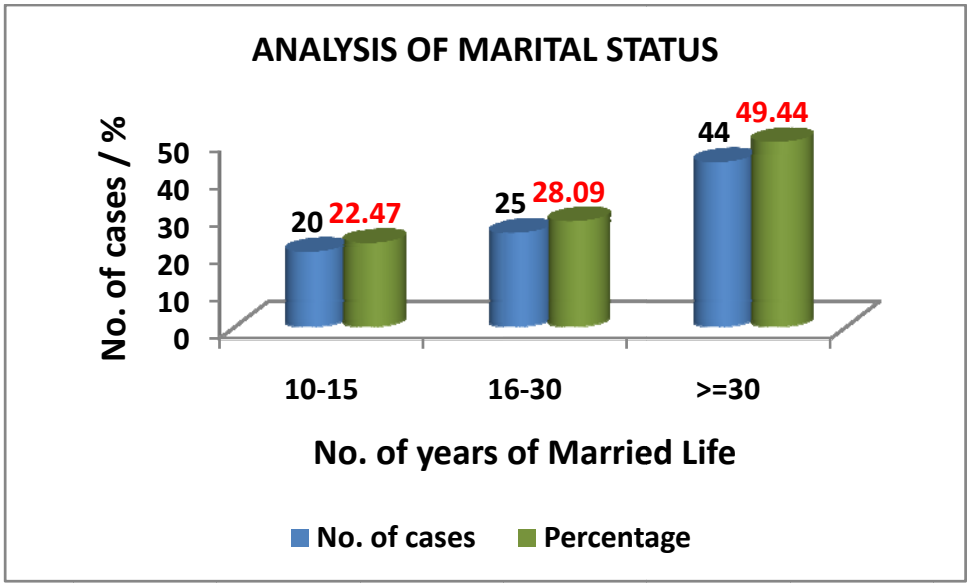
OF WOMEN IN THE STUDY

Menstrual Status	Infections	Inflammatory Diseases	Benign Cysts	Malignant & Premalignant	Total	p value
Reproductive & perimenopausal	28(87.5%)	10	8.(66.7 %)	2	48	0.000 (<0.001 highly significant)
Postmenopausal	4	23 (69.7%)	4	10 (83.3%)	41	
Total	32	33	12	12	**89**	

There were 48 and 41 cases in the reproductive, perimenopausal and postmenopausal groups respectively. 87.5% of infections and 66.7% of benign cysts/lesions were common in the former group and 69.7% of inflammatory diseases and 83.3% of malignant and premalignant diseases were common in the latter group with a highly significant p value of 0.000.

CHART 3

ANALYSIS OF MARITAL STATUS

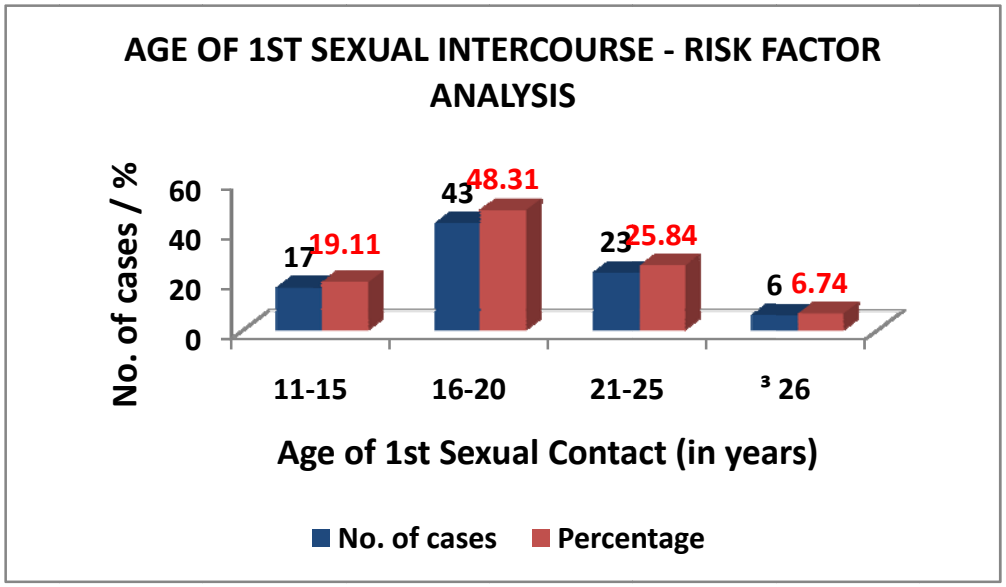


About 49.44% of women in the study group had ≥ 30 years of married life. Women start their reproductive career at an earlier age which predisposes them to various vulvar diseases and carcinoma. This observation has a significant p value of 0.004.

CHART 4

AGE OF 1ST SEXUAL INTERCOURSE –

RISK FACTOR ANALYSIS



In this study 48.31% (43 out of 89 cases) had early initiation of sexual activity in the age group of 16 to 20 years, forming high risk group for the development of vulvar cancer and other vulvar diseases. The p value of this observation is highly significant 0.000.

TABLE 4

PARITY ANALYSIS OF STUDY POPULATION

Parity	No. of cases of Malignant & Premalignant diseases	%	No. of cases of Other vulvar diseases	%	p Value
Nullipara	3	25	1	1.3	0.000 (<0.001 highly significant)
P1	-	-	3	3.9	
P2	1	8.3	38	**49.4**	
P3	1	8.3	22	28.6	
≥ P4	7	**58.3**	13	16.9	

Though P2 is the most common parity among the vulvar diseases studied, ≥ P4 is most common parity among the women with vulvar cancer constituting 58.3% of all cases of carcinoma, which is a risk factor for the disease. The observation has a P value of 0.000.

TABLE 5

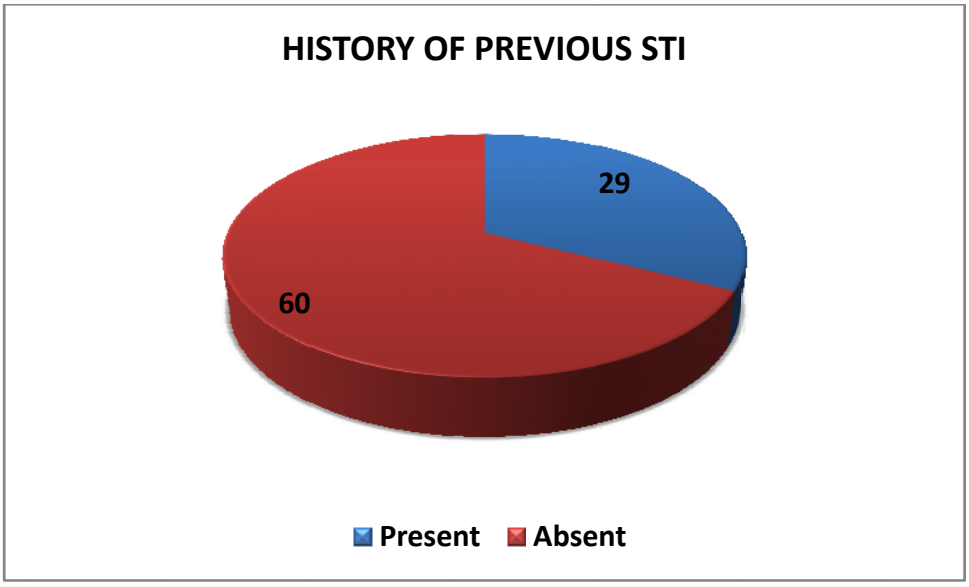
ANALYSIS OF CO-MORBID CONDITIONS

Co Morbid Conditions	No. of cases	%	p Value
Diabetes	30	33.7	0.570 (Not Significant)
Hypertension	13	14.6	0.003 (Significant)
Obesity	19	21.3	0.019 (Significant)
Immunosuppression (HIV Positive)	4	4.5	0.171 (Not Significant)

Diabetes found in 33.7% cases especially in infection group (11 out of 32), with an insignificant p value whereas hypertension and obesity seen in 14.6% and 21.3% of cases respectively with a significant p value. 4 out of 89 cases were HIV positive out of which 2 was carcinoma vulva. However the p value of 0.171 is not significant.

CHART 5

HISTORY OF PREVIOUS STI

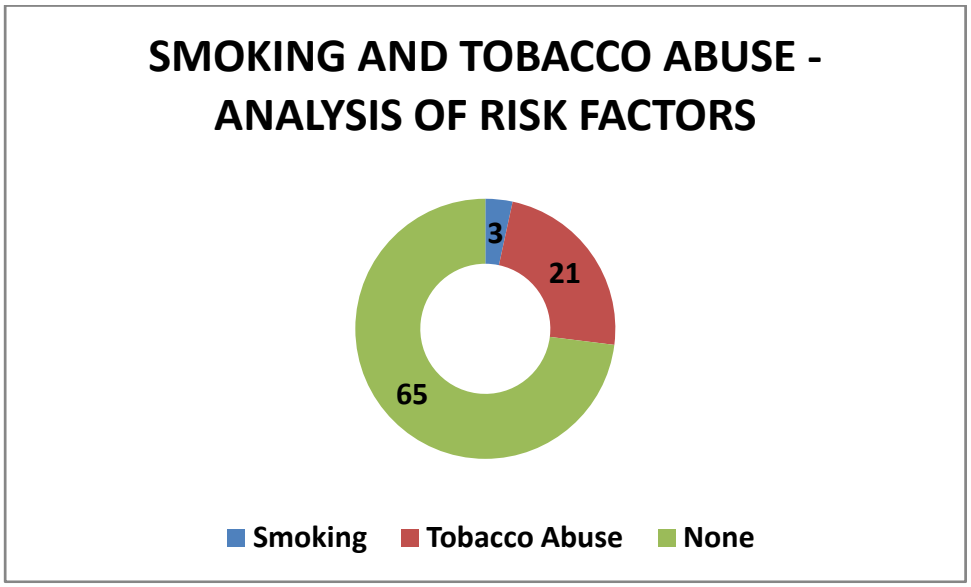


History of previous sexually transmitted infections seen in 29 out of 89 cases with a highly significant p value of 0.000 especially seen in the infection group (65.6% ie. 21 out of 32 cases).

TABLE 6

Risk Factors	No of cases	Percentage	p Value
Smoking	3	3.4	0.365 (Not significant)
Tobacco Abuse	21	23.6	0.000 (highly significant)
None	65	73.0	

CHART 6



3 out of 89 women had the habit of smoking with an insignificant p value of 0.365 whereas tobacco abuse seen in 21 cases (23.6%) with a significant p value of 0.000. Out of the tobacco abusers 10 cases had malignant and premalignant diseases.

TABLE 7

ANALYSIS OF SEXUAL PROMISCUITY

Type of Promiscuity	No. of cases	Percentage	p value
Extramarital	4	4.49	0.011
Premarital	8	8.99	
Both	Nil	0	
Total	12	13.48	

Sexual promiscuity either extramarital contact or premarital contact found in 13.48% of cases. Exposure to multiple sexual partners predisposes to vulvar cancer.

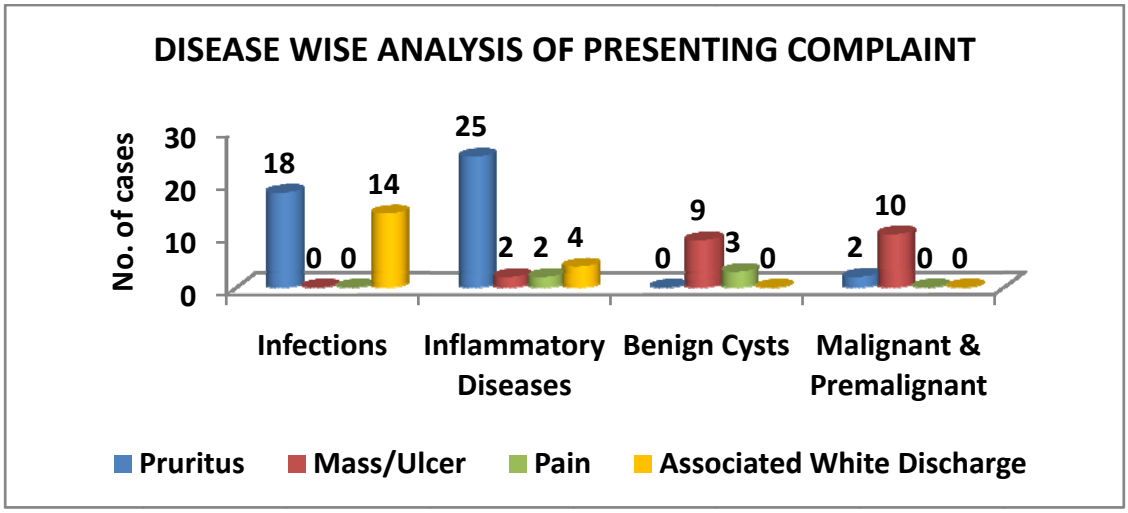
TABLE 8

DISEASE WISE ANALYSIS OF MOST COMMON

PRESENTING COMPLAINT

Presenting complaint	Infections	Inflammatory diseases	Benign Cysts	Malignant & Premalignant	p value
Pruritus	**18 (56.3%)**	**25(75.8%)**	-	2	0.000 (<0.001 highly significant)
Mass/Ulcer	-	2	**9(75.0%)**	**10(83.3%)**	
Pain	-	2	3	-	-
Associated white discharge	**14(43.8%)**	4	-	-	-

CHART 7



Overall pruritus is the most common presenting complaint seen in 56.3% of infections and 75.8% of inflammatory diseases whereas 75% of benign cystic lesions and 83.3% of malignant conditions presented with mass / ulcer as the most common presenting complaint. About 43.8% of infections presented with white discharge associated with itching. This observation has a highly significant p value of 0.000

TABLE 9

DISEASE WISE ANALYSIS OF CLINICAL SIGNS

Clinical Signs	Infections	Inflammatory Diseases	Benign Cysts	Malignant and Premalignant	Total	p Value
Discoloration	32	31	-	-	63	0.000 (<0.001 highly significant)
Mass	-	1	12	9	22	
Ulcer	-	1	-	3	4	

Discoloration of vulvar skin is the most commonly seen clinical sign (63out of 89 cases i.e. 70.8% of all cases) especially seen in the infections group and inflammatory diseases. Mass seen in 22 out of 89 cases especially among benign and malignant diseases, constituting 24.7% of all cases. This observation has a p value of 0.000 (highly significant).

VULVAR LESIONS ASSOCIATED WITH OTHER GYNAECOLOGICAL CONDITIONS

Leucoplakia with Ca ovary	:	1 case
Leucoplakia with Ca cervix (Post EBRT)	:	3 cases
Ca Vulva with UV prolapse	:	1 case

Poorly diff. squamous cell Ca Vulva Stage III with UV prolapse

Leucoplakia simple squamous hyperplasia

PAPANICOLAOU SMEAR REPORTS

Total PAP smears taken	:	87
Normal smears	:	45
Inflammatory smears	:	19
Atrophic smears	:	23

ALL WERE NEGATIVE FOR SIL (Squamous Intraepithelial Lesions)

No associated CIN lesions in any of the cases.

KOH SMEAR STUDY

Total No. of KOH smears taken	:	63
NO. of smears positive for candidiasis	:	29

Vulvoscopic – acetowhite areas on vulva

VULVOSCOPIC ANALYSIS – HPE REPORTS

Total No. of Vulvoscopy done	:	65
Normal Study	:	32
Abnormal Study	:	33
• VIN III	:	2
• Simple squamous hyperplasia (SSH)	:	19
• SSH with mild dysplasia	:	2
• SSH with moderate dysplasia	:	1
• Lichen simplex chronicus	:	3
• Lichen sclerosus	:	6
• Lichen Planus	:	0

SSH with moderate dysplasia

Lichen simplex chronicus

TREATMENT ANALYSIS

Vulval Disease	No. of Cases	Treatment Given
Vulval candidiasis Tinea Cruris	32	Oral Fluconazole 150 mg single dose + Clotrimazole ointment twice daily application for 2 weeks
Benign Cysts Lesions	12	Excision / Marsupialisation
Simple squamous hyperplasia only	19	Topical steroid ointment Clobetasole twice daily for 2 weeks
Simple squamous hyperplasia with mild dysplasia 2 cases	1	Topical steroid ointment Clobetasole twice daily for 2 weeks. Follow up 6 months later.
Simple squamous with moderate dysplasia	1	Simple vulvectomy done
Lichen Sclerosus	1 out of 6	Simple vulvectomy
	5 out 6	Topical steroid ointment Clobetasole twice daily for 2 weeks. Follow up 6 months later.
Lichen Simplex chronicus	3	Topical steroid ointment Clobetasole twice daily for 2 weeks, antibiotics, followup.
Post RT skin necrosis	1	Analgesics, Observation
Vulvar lymphedema	1	Observation
VIN III	2	Wide local Excision
Carcinoma Vulva	2	Surgery only
	4	Palliative Radiation only
	3	Surgery + Post of RT
	1	Lost to follow up

DISCUSSION

DISCUSSION

In our study of 89 women with vulvar diseases the analysis of cases done by categorizing them into 4 major groups. Infections constituting 35.96% (32 cases out of 89), inflammatory diseases 37.08% (33 cases out of 89), benign cysts/lesions in 12 out of 89 cases constituting 13.48% and premalignant and malignant diseases of vulva in 12 out of 89 cases forming 13.48%.

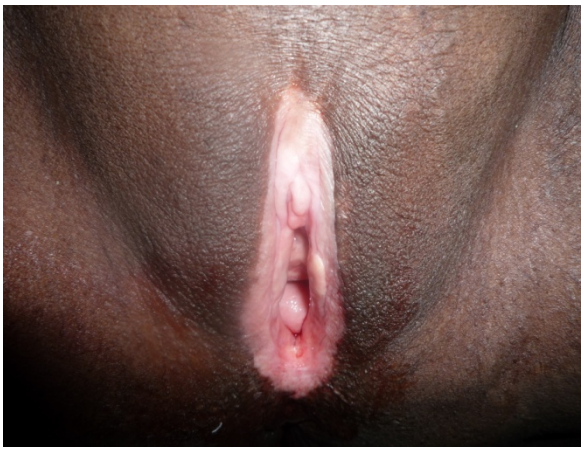
Age of the women ranged from 30 years to 75 years with a median age of 45 years. Out of 89 cases 41 of them were postmenopausal constituting 46.07% of cases. In a study on clinico-pathological analysis of vulvar diseases over 5 years in Kolkata in India between 2000-2005 about 80% were postmenopausal out of 55 women included in the study.

The epidemiological risk factors of cancer vulva are similar to those of cancer cervix. About 41.6% of women in our study had a monthly income of Rs.1000 to Rs.1500 belonging to the low economic status and about 37.1% being illiterates both of which are contributing factors for the development of cancer vulva.

Infections especially vulvar candidiasis seen most commonly in the younger women of 30-39 years of age (20 out of 32 cases).This corroborates with the epidemiological study conducted in India in 2007 on 350 women in which there was a consistent increase in incidence of VVC in the 2^{nd} to 4^{th} decades of life especially among the women of low socio-economic status and poor personal hygiene. It is well known that there is an association between VVC and diabetes. In this study diabetes was found in 11 out of 32 cases in the infection group (34.4%).

Vulvar warts are strongly associated with HPV infections 6, 11. We had only one case of condyloma accuminatum. There was no associated cervical pathology in that patient whereas a study on correlative analysis of cervical lesions in patients with vulvar condylomas by Qing et al in 418 cases over 2 years (2002-2004) showed that 20.6% cases had high risk HPV infection with cervical lesions.

Lichen Sclerosus has two peak ages of presentation. The 1st group in pre-menarcheal girls who are not included in our study and the 2nd peak in postmenopausal women. In our study, we had 6 cases of histology proven LS out of which 4 were postmenopausal women. In a clinical study by Singh et al in India between 2005-2007 out of 26 cases in the study the mean age was 44 years with pruritus being the most common symptom with a median duration of 2.5 years. Similarly in our study also the mean age was 47.7 years with pruritus being the predorminant symptom seen in 5 out of 6 cases (83.3%) and a median duration of 11 months. None had any previous history of any autoimmune disorders.



Lichen Sclerosus- atrophy of labia majora

SSH-mild dysplasia

In our study we had only 3 cases of Lichen Simplex Chronicus (3.37%) with the mean age of 55.3 years and a median duration of 12 months and all of them presented with pruritus as the most common complaint. In a study on the pattern of non-venereal dermatosis of vulva in South India in 2008, out of 120 cases in the study population, 16 had LSC (13.3%) with a mean age of 49.9 years and a median duration of 2 years.

Lichen Planus is well-known inflammatory dermatoses affecting the mucosa of vulva and vagina but we did not report any case due to the low prevalence of the condition.

In our study we had 7 cases of Bartholin's cysts/abscess out of which 4 cases were in the reproductive age group and 3 cases were postmenopausal. The mean age of presentation was 46.5 years and the median duration was 0.25 months. 4 cases presented with mass as the presenting complaint whereas it was pain in the vulva in the remaining 3 cases. We had one case the rare entity of leiomyoma vulva in a 37 year old woman who presented with mass in the vulva of 8 years duration.

Benign Leiomyoma of Vulva

There were 2 cases of VIN III , a pre-malignant disease of vulva with a mean age of presentation of 64 years and a median duration of symptoms of 9 months and presented with unifocal mass in the vulva especially in the labia majora. Both were postmenopausal women with the risk factor of tobacco abuse. They were treated with wide local excision. In a study of 293 women with VIN, Basta et al reported that women > 45 years had unifocal lesions (68.2%) with chronic itch-scratch-itch cycle similar to our patients.

In our study we had 10 cases of cancer vulva belonging to the age group of 36 to 75 years with a mean age of 57.4 years. 8 out of 10 cases belonged to postmenopausal group with mass in the vulva being the presenting complaint in 9 out of 10 cases. The duration of symptoms varies from 4 months to 4 years and median of 2 years. Risk factors like low income of < Rs.500 (6 cases), illiteracy (10cases), HIV +ve in 2 patients, tobacco abuse in 8 out of 10 cases, higher order parity of >= P4 in 6 cases. 7 cases presented with mass (70%) and rest of the 3 cases with ulcer in the vulva (30%). Histologically 5 were well differentiated squamous cell Ca (including one rare case of Verrucous cell Ca) and the rest of the 5 cases were poorly differentiated squamous cell Ca. As per FIGO Clinical staging the stage of the disease varied from stage 2 to stage 4 (3 cases in stage II, 5 cases in stage III and 2 cases in stage IV). Inguinal nodes were palpable in 4 cases in one or both sides.

Well differentiated verrucous squamous cell carcinoma Stage II

Well differentiated squamous cell Ca vulva stage II.

Poorly differentiated squamous cell Ca vulva Stage III with inguinal nodes

SUMMARY

SUMMARY

89 symptomatic women attending the gynaec clinic at our institute were the participants of this study. After obtaining the informed consent they were subjected to a detailed history taking and physical examination. Data on their age distribution, socio-economic status, education, menstrual and marital history including sexual history, personal hygiene were studied and analysed.

Pap smear was offered to 87 cases and associated cervical pathology ruled out. All were negative for squamous intraepithelial lesions or CIN. 63 patients with pruritus with or without associated white discharge were tested for the presence of fungal infections using KOH smears and those cases with infections were treated with oral and topical antifungals.

Vulvoscopy performed in 65 patients showed it to be normal in 32 cases and abnormal in 33 cases including 2 patients with VIN III, 6 cases with Lichen sclerosus, 3 cases with Lichen simplex chronicus, 22 cases with simple squamous hyperplasia with or without dysplasia.Both the VIN III treated with wide local excision with 1 cm free margins. Simple Vulvectomy for a case of lichen simplex chronicus and another for a case of simple squamous hyperplasia with moderate dysplasia, both had intense pruritus disturbing the quality of life of patients. All others were treated with topical steroids and awareness created about the need for follow up.

Out of the 10 cases of Carcinoma vulva one patient was lost to follow up after the initial visit. Of the rest of the biopsy proven cases clinical staging showed 3 cases with stage II, 5 cases with stage III & rest of the 2 cases in stage IV. Of the 10 cases four had palpable inguinal nodes on one or both sides.

Well differentiated sq cell Ca vulva stage IV with inguinal nodes

Poorly differentiated sq cell Ca vulva stage IV with inguinal nodes

Radical vulvectomy with bilateral inguino-femoral groin dissection with or without post- operative radiotherapy is the standard treatment of choice for invasive vulvar carcinomas. Two cases with negative nodes and > 1cm tumour free margin with complete resection of the tumour were treated with surgery only. 3 cases with positive nodes and narrow tumor-free margins of < 8mm were subjected to post-op adjuvant radiotherapy. 4 patients with poor performance status and who were unfit for surgery were treated with palliative radiation, external beam radiotherapy. In our study patients' participation and co-operation was encouraging.

This study also helped to create awareness among women regarding the modifiable risk factors and the benefits of early detection and treatment in reducing the morbidity and mortality due to the invasive disease. Vulvoscopy screening at every gynaec clinic will help us in early detection and prompt treatment of patients with pre-cancerous lesions as well.

CONCLUSION

CONCLUSION

Worldwide about 60% of all vulvar cancers occur in developing countries like India. There is a rise in insitu cancers among the younger women due to increasing HPV prevalence and the related VIN.

Factors such as smoking, tobacco abuse, immunosuppression, sexual promiscuity are key contributors which can be modified. Hence there is a need to create awareness among the women regarding the etiology, risk factors and malignant potential of some vulvar diseases. At present there is no specific widespread screening program for vulvar cancers like the cervical neoplasm. Vulvoscopy is an excellent triage tool for defining suspicious lesions and it should be made available in all headquarters hospitals and tertiary centers. Gynecologists are to be trained adequately in vulvoscopic methods so as to enable early diagnosis with high index of suspicion. Broad dissemination of HPV prevention vaccine has the potential to reduce HPV related vulvar cancers in young women. Management of women with chronic vulvar diseases has been one of the most challenging aspects for a long time. This study will help focus the direction of further research studies on the early diagnosis and treatment of vulvar diseases.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Singh N,Thappa DM,Jaishankar TJ,Habeebullah S.A clinical study of vulval lichen sclerosus at a tertiary care hospital in South India. Indian J Sex Transm Dis 2007;28:87-90
2. Singh N,Thappa DM,Jaishankar TJ,Habeebullah S.Pattern of non-venereal dermatoses of female genital tract in South India, Dermatology online journal 14(1):1
3. Foster DC. Vulvar Disease. Obstet Gynecol 2002; 100:145-63.
4. Abigail Kingston. Vulval disease in the postmenopausal patient: a guide to current management. Menopause International 2010; 16:117-120.
5. F.Levi,L.Randimbison & C.La Vecchia Descriptive epidemiology of vulvar and vaginal cancers in Vaud,Switzerland,1974-1994. Annals of Oncology 9:1229-1232, 1998.
6. Edward J.Wilkinson,I.Keith Stone . Atlas of Vulvar Disease.Second edition.1-205
7. Lanneau GS,Argenta PA, Lanneau MS, *et al*. Vulvar cancer in young women: demographic features and outcome evaluation. Am J Obstet Gynecol 2009;200:645.e1-645.e5.
8. Rakshit Bibek Mohan, Mukhopadhyay Amitava, Saumandal Bijoy Kumar. Clinico-pathological analysis of vulval lesions-A 5 year analysis in a tertiary teaching hospital.J Obstet Gynecol India. September 2006; 56(5):440-442.
9. Folshade Omole, Barbara J.Simmons, Yolanda Hacker. Management of Bartholin's Duct Cyst and Gland Abscess. Am Fam Physician 2003;68:135-40.

10. Leonard Niamh,Sharma Naveen, Bell Hazel. Diagnosis of Vulval Inflammatory Dermatoses: A Pathological study with clinical correlation. International Journal of Gynecological Pathology 2009.
11. Stroup AM, Harlan LC,Trimble EL. Demographic,Clinical and treatment trends among women diagnosed with Vulvar Cancer in the U.S.Gynecol Oncol.2008;108(3):557-583.
12. Glenn M.Updike,Harold C.Wiesenfeld. Insight into the treatment of vulvar pain: A survey of clinicians. American Journal of Obstet and Gynecol.2005; 193:1404-9.
13. A.Bauer, C.Greif, R.Vollandt, A.Merker, P.Elsner. Vulval diseases need an interdisciplinary Approach. Dermatology 1999; 199:223-226.
14. Mona Saraiya. Incidence of In situ and Invasive Vulvar Cancer in the U.S,1998-2003.Cancer 2008;113(10):2865-72.published by the American Cancer Society.
15. A Basta,K.Adamek,K.Pitynski. Intraepithelial neoplasia and early stage vulval cancer- epidemiology, clinical and virological observations. European J.of Gynecol Oncol.1999;20(2):111-4.
16. Meffert JJ, Davis BM, Grimwood RE. Lichen sclerosus. J Am Acad Dermatol 1995; 32: 393-416.
17. Kennedy CM,Peterson LB,Galask RP. Erosive vulvar lichen planus: retrospective review of characteristics and outcomes in 113 patients seen in a vulvar specialty clinic.J.Repro Med 2008; 53(10):781-4.
18. Sobel JD, Faro S, Force RW, Foxman B, Ledger WJ, Nyirjesy PR, *et al* . Vulvovaginal candidiasis: Epidemiologic, diagnostic and therapeutic considerations. Am J Obstet Gynecol 1998; 178:203-11.

19. N Jindal, P Gill, A Aggarwal. An epidemiological study of vulvovaginal candidiasis in women of childbearing age. Indian Journal of Medical Microbiology 2007; 25(2) :175-176.
20. N F Hacker. Current Management of Early Vulvar Cancer. Ann Acad Med Singapore 1998; 27:688-92.
21. Qing Li, Weihong Li, Zhihua Liu. A correlative analysis of cervical lesions in patients with vulva condyloma acuminatum. Chinese journal of clinical oncology 2006; 3(6):419-422.
22. A.Ferenczy. Using the laser to treat vulvar condylomata acuminata and intraepidermal neoplasia. Canadian Medical Association Journal, Vol 128, Issue 2 135-137.
23. S.M.Neill, F.M.Tatnall and N.H.Cox. Guidelines For the Management of Lichen Sclerosus **.A** British Journal of Dermatology 2002; 147: 640–649.
24. S. M. Cooper Gao, J. J. Powell, F. Wojnarowska_ Does Treatment of Vulvar Lichen Sclerosus Influence Its Prognosis? *ArchDermatol.* 2004; 140:702-706.
25. Andrew T. Goldstein, Theodore Xavier O'connell, Leena Shankar Nathan, Non-Neoplastic Epithelial Disorders of the Vulva .Am Fam Physician. 2008; 77(3):321-326.
26. Andrew T Goldstein,Arielle Metz. Vulvar Lichen Planus. Clinical Obstetrics and Gynecology 2005; Volume 48(4), 818–823.
27. JONES *et al* American Cancer Society *Cancer Facts and Figures 2011*. Atlanta, Ga: AmericanCancer Society; 2011.

28. Jones, R.W., J. Baranyai, and S. Stables, Trends in squamous cell carcinoma of the vulva: the influence of vulvar intraepithelial neoplasia. Obstet Gynecol, 1997. 90(3): p. 448-52.
29. JUDSON *et al* review of in situ and invasive vulvar carcinomas from the Surveillance, Epidemiology and End-Results (SEER) program database over a 28-year 1973-2000.
30. Telinde's Operative Gynecology 10th ed page 497.
31. Jonathan S.Berek. Berek &Novak's Gynecology. Fourteenth edition1549-80.

PROFORMA

A CLINICAL STUDY ON VULVAR DISEASES AMONG SYMPTOMATIC PATIENTS ATTENDING GYNAEC OP IN THE INSTITUTE OF OBSTETRICS AND GYNAECOLOGY, CHENNAI.

PROFORMA

NAME AGE: IP NO DATE:

PARA LIVE ABORTIONS

EDUCATION :

SOCIOECONOMIC STATUS :

COMPLAINTS :

H/O pruritus : Yes / No

H/O mass in the vulva : Yes / No

Duration

Site

Size

Bleeds on touch

H/O pain in vulval region : Yes / No

H/O discharge P/V : Yes / No

Duration

Amount

Colour

Odour

Consistency

Associated with Itching

MENSTRUAL HISTORY

Menarche at :

Regular / Irregular

Clothes / Napkins

Disposal / Reused/detergents

LMP

Menopause at :

Postmenopausal bleeding : Present / Absent

MARITAL HISTORY:

Married since -

Living with husband or not -

H/O previous marriages -

H/O premarital /extramarital contacts -

OBSTETRIC HISTORY

Para Live LCB :

Sterilised or Not :

Mode of delivery :

Age of first child birth- :

PERSONAL HISTORY

H/O personal hygiene :

H/O Smoking / Tobacco :

H/O drug abuse :

SEXUAL HISTORY

Age of first intercourse :

Coital frequency :

Type of sex(Oral/Vaginal/Anal) :

Exposure to commercial sex workers :

PAST HISTORY:

H/O previous Gynaecological problems :

H/O previous Pap smear :

H/O previous Colposcopy :

H/O STI and treatment if any :

H/O Past medical(diabetes) / SurgicaL :

FAMILY HISTORY

GENERAL EXAMINATION

Height : Weight : BMI :

Built – Thin / Moderate / Obese

Febrile / Afebrile

Pallor - Present / Absent

Icterus-Present/Absent

Pedal Edema – Present / Absent

Skin Lesions – Present / Absent

Lymph nodes enlargement

SYSTEMIC EXAMINATION

CVS

RS

Abdomen

LOCAL EXAMINATION

Swelling

Discoloration Erythema/ Leucoplakia

Ulcers Single or Multiple

+/- Induration

+/_Necrotic slough

SPECULUM EXAMINATION

PAPSMEAR

BIMANUAL EXAMINATION

Cervix position up / down

Uterus anteverted / retroverted

Uterus normal size / bulky

Fornices free/tenderness

PER RECTAL EXAMINATION

Parametrium

Rectal Mucosa

VULVOSCOPIC EXAMINATION

VULVAL BIOPSY

HISTOPATHOLOGICAL REPORT

ANALYSIS

The data collected are analysed statistically using SPSS software (version 15) with Chi square tests as the tools used and the vulvar diseases studied.

CONSENT FORMS

A CLINICAL STUDY ON VULVAR DISEASES AMONG SYMPTOMATIC PATIENTS ATTENDING GYNAEC OP IN THE INSTITUTE OF OBSTETRICS AND GYNAECOLOGY

PATIENT CONSENT FORM PART I

Vulvar problems account for a significant numbers of patients attending gynaec OP. The vulvar carcinoma continues to rise in incidence in recent years. Therefore attempts to reduce this cancer must focus on recognizing precursor lesions like VIN, Lichen Sclerosus which could progress to carcinoma if left untreated.

This study aims to evaluate the disease among symptomatic patients attending gynaec OP at our institute, a tertiary care centre.

Vulvoscopy offers an excellent opportunity in clinical gynaecologic practice for defining and delineating cytologically defective lesions of the vulva and for early diagnosis of the disease.

For this observational study, all participants are to receive a complete gynaecological examination including colposcopic evaluation and a structured interview about socioeconomic characteristics and risk factors for vulvar diseases.

RISK TO THE PATIENT

There is no known risk to the patients participating in the study. The data will be obtained from the patients and their case records currently used in the department.

PATIENT CONSENT FORM - PART II

STUDY TITLE: A clinical study on vulvar disease among symptomatic patients attending gynaec OP in Institute of Obstetrics and Gynaecology, Chennai.

STUDY CENTRE : Department of Obstetrics and Gynaecology, Institute of Obstetrics and Gynaecology, Egmore, Chennai – 8.

Patients may check(✓) these boxes.

PARTICIPANT NAME:

I confirm that I have understood the purpose of the above study. I have the opportunity to ask questions and all my questions and doubts have been answered to my complete satisfaction.	☐
I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving any reason, without my legal rights being affected.	☐
I understand that investigator, the institution, regulatory authorities and the ethics committee will no need my permission to look at my health records both in respect to the current study and any further research that may be conducted in relation to it, even if I withdraw from the study. I understand that my identity will not be revealed in any information released to third parties or published, unless as required under the law. I agree not to restrict the use of any data or results that may arise from this study.	☐

I hereby consent to undergo complete physical examination and diagnostic tests including hematological, biochemical, radiological examinations. ☐

I agree to take part in the above study and to comply with the instructions given during the study and to faithfully co-operate with the study team and to immediately inform the study staff if I suffer from any deterioration in my health. ☐

I hereby consent to participate in this study of **" A clinical study on vulvar diseases among symptomatic patients attending gynaec OP in Institute of Obstetrics and Gynaecology, Chennai".** ☐

Signature of the Patient/Thumb impression:……

Place Date Address

Signature of the investigator……

Place Date Address.

நோயாளிகள் ஒப்புதல் படிவம்

மகளிர் நோயியல் புறநோயாளி பிரிவிற்கு வரும் பெண்கள் பிறப்புறுப்பின் வெளிப்பகுதியில் ஏற்படும் நோய்களை பற்றி ஆய்வு செய்தல்

ஆய்வு செய்யும் இடம் : மகப்பேறு அரசு மருத்துவமனை
எழும்பூர், சென்னை - 08.

பகுதி - I

மகளிர் நோயியல் புறநோயாளிகள் பிரிவிற்கு வரும் பெண்களின் பிறப்புறுப்பின் வெளிப்பகுதியில் ஏற்படும் நோய்களைப் பற்றி கண்டறிய இந்த ஆய்வு மேற்கொள்ளப்படுகிறது.

பிறப்புறுப்பின் வெளிப்பகுதியில் ஏற்படும் சில நோய்கள் புற்று நோய் கட்டியாக மாறக் கூடிய வாய்ப்புள்ளது. எனவே அவற்றை ஆரம்ப நிலையிலேயே கண்டுபிடித்து தகுந்த சிகிச்சை அளித்தால் கட்டுப்படுத்த முடியும்.

மேலும், பிறப்புறுப்பின் வெளிப்பகுதியில் உள்ள நோய்கள் HIV./HPV போன்ற பால்வினை நோய்களின் அறிகுறிகளாகவும் இருக்கலாம். எனவே அவற்றை கண்டறியவும் இந்த ஆய்வு உதவும்.

இந்த நோய்களை கால்போஸ்ககோப் (Colposcope) எனப்படும் கருவி மூலம் பரிசோதனை செய்து தேவைப்பட்டால் சதை மற்றும் திசு பரிசோதனையும் செய்யப்படும்.

இந்த ஆய்வில் பங்கேற்கும் பெண்களுக்கு எந்த வித பாதிப்பும் ஏற்படாது.

மேலும் நோயாளிகளின் விவரங்கள் ரகசியமாக வைத்திருக்கப்படும் என்று உறுதி அளிகக்ப்படுகிறது.

பகுதி II

கய ஒப்புதல் படிவம்

மகளிர் நோயியல் புறநோயாளி பிரிவிற்கு வரும் பெண்கள் பிறப்புறுப்பின் வெளிப்பகுதியில் ஏற்படும் நோய்களை பற்றி ஆய்வு செய்தல்

ஆய்வு செய்யும் இடம் : மகப்பேறு அரசு மருத்துவமனை
எழும்பூர், சென்னை - 08.

பங்கு பெறுபவரின் பெயர் :
பங்கு பெறுபவரின் எண். :
பங்கு பெறுபவரின் வயது :
பங்கு பெறுபவர் இதனை ( ) குறிக்கவும்.

மேலே குறிப்பிட்டுள்ள மருத்துவ ஆய்வின் விவரங்கள் எனக்கு விளக்கப்பட்டது. என்னுடைய சந்தேகங்களை கேட்கவும் அதற்கான தகுந்த விளக்கங்களை பெறவும் வாய்ப்பளிக்கப்பட்டது ☐

நான் இவ்வாய்வில் தன்னிச்சையாகத்தான் பங்கேற்கிறேன். எந்த காரணத்தினாலோ எந்த கட்டத்திலும் எந்த சட்ட சிக்கலுக்கும் உட்படாமல் நான் இவ்வாய்வில் இருந்து விலகி கொள்ளலாம் என்றும் அறிந்து கொண்டேன். ☐

இந்த ஆய்வு சம்மந்தமாகவோ, இதை சார்ந்த மேலும் ஆய்வு மேற்கொள்ளும் போதும் இந்த ஆய்வில் பங்குபெறும் மருத்துவர், ஆய்வு மேற்கொள்ளும் நிறுவனம், நன்நடத்தை நெறிமுறைகள் குழு, ஒழுங்குமுறை ஆணையங்கள், என அறிந்து கொள்கிறேன். நான் ஆய்விலிருந்து விலகிக் கொண்டாலும் இது பொருந்தும் என அறிகிறேன். ☐

இந்த ஆய்வின் மூலம் கிடைக்கும் தகவல்களையோ, முடிவுகளையோ அறிவியல் சார்ந்த தேவைகளுக்காக பயன்படுத்திக்கொள்ள மறுக்கமாட்டேன். மூணாம் நபர்களுக்கு தரப்படும் அல்லது பிரசுரிக்கவும் ஏதேனும் தகவல்களில் என் தனிப்பட்ட அடையாளம் வெளிப்படுத்தப்படமாட்டாது எனவும் நான் புரிந்து கொண்டேன். ☐

இந்த ஆய்வில் பங்கு கொள்ள ஒப்புக் கொள்கிறேன். எனக்கு கொடுக்கப்பட்ட அறிவுரைகளின்படி நடந்து கொள்வதுடன் இந்த ஆய்வை மேற்கொள்ளும் மருத்துவ அணிக்கு உண்மையுடன் இருப்பேன் என்று உறுதியளிக்கிறேன். ☐

பங்கேற்பவரின் கையொப்பம்.....இடம்.....தேதி

கட்டைவிரல் ரேகை

பங்கேற்பவரின் பெயர் மற்றும் விலாசம்.....

ஆய்வாளரின் கையொப்பம்..... இடம் ..... தேதி

ஆய்வாளரின் பெயர் .....

ஆராய்ச்சி தகவல் தாள்

மகளிர் நோயியல் புறநோயாளி பிரிவிற்கு வரும் பெண்கள் பிறப்புறுப்பின் வெளிப்பகுதியில் ஏற்படும் நோய்களை பற்றி ஆய்வு செய்தல்

ஆய்வு செய்யும் இடம் : மகப்பேறு அரசு மருத்துவமனை
எழும்பூர், சென்னை - 08.

சென்னை எழும்பூரில் உள்ள மகளிர் நோயியல் புறநோயளிகள் பிரிவிற்கு வரும் பெண்களிடம் பிறப்புறுப்பின் வெளிப்பகுதியில் ஏற்படும் நோய்களைப் பற்றி கண்டறிய இந்த ஆய்வு மேற்கொள்ளப்படுகிறது.

நீங்களும் இந்த ஆராய்ச்சியில் பங்கேற்க நாங்கள் விரும்புகிறோம். பிறப்புறுப்பின் வெளிப்பகுதியில் ஏற்படும் நோய்களை கண்டறியவும் அதற்கான தகுந்த சிகிச்சையும் இங்கு அளிக்கப்படுகிறது.

இந்த நோய்களை கால்போஸ்கோப் எனப்படும் கருவி மூலம் பரிசோதனை செய்து தேவைப்பட்டால் திசு பரிசோதனையும் செய்யப்படும் இதனால் உங்களுக்கு எந்த வித பாதிப்பும் ஏற்படாது.

முடிவுகளை அல்லது கருத்துக்களை வெளியிடும் போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் உள்ளது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சிலிருந்து பின் வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம் பங்கேற்பாளர் கையொப்பம்

தேதி

ABBREVIATIONS

ABBREVIATIONS

HPV	:	Human Papilloma Virus
HIV	:	Human Immuno-deficiency Virus
VVC	:	Vulvo Vaginal Candidiasis
OPD	:	Out Patient Department
IOG	:	Institute of Obstetrics and Gynaecology, Chennai
VIN	:	Vulvar Intraepithelial Neoplasia
CIN	:	Cervical Intraepithelial Neoplasia
LS	:	Lichen Sclerosus
LSC	:	Lichen Simplex Chronicus
LP	:	Lichen Planus
SCC	:	Squamous Cell Carcinoma
SEER	:	Surveillance, Epidemiology and End-Results
ISSVD	:	International Society for the Study of Vulvar Diseases
RT	:	Radiotherapy
CT	:	Chemotherapy
VEGF	:	Vascular Endothelial Growth Factor

TGF	:	Transforming Growth Factor
OP/IP	:	Outpatient/In patient
SES	:	Socio Economic Status
EDN	:	Educational status
STI	:	Sexually Transmitted Infection
EMC	:	Extra Marital Contact
PMC	:	Pre Marital Contact
SSH	:	Simple Squamous Hyperplasia
KOH	:	Potassium Hydroxide
HPE	:	Histo -Pathological Examination

MASTER CHART

MASTER CHART

IP/OP NO	AGE	SES monthly	EDN STATUS	MENSTRUAL St.	PARITY	COMPLAINTS	DURATION	DM	HT	OB	HIV +	OTHERS
11543	56	500-1000	illiterate	postmenopausal	P3L3	mass	0.5 months	+	+	+		
11673	57	500-1000	illiterate	postmenopausal	P2L2	pruritus	3 months					
11383	30	1000-1500	HSc	menstruating	nullipara	mass	0.25 months					
10437	40	1000-1500	HSc	menstruating	P2L2	pruritus	2 months					
22082	32	1000-1500	upto 10th	menstruating	P2L2	discharge p/v	0.5 months					
13209	42	1000-1500	upto 10th	menstruating	P3L3	pruritus	12 months					
21074	56	500-1000	illiterate	postmenopausal	P3L3	discharge p/v	2 months	+	+			
16612	60	<500	illiterate	postmenopausal	P7L5	pruritus	48 months		+			
22832	33	1000-1500	upto 10th	menstruating	P2L2	pruritus	3 months			+		
14213	65	500-1000	illiterate	postmenopausal	P4L4	pruritus	12 months					
26842	60	1000-1500	upto 10 th	Postmenopausal	P2L2	discharge p/v	6 months					
26821	38	1000-1500	upto 10 th	menstruating	P3L3	discharge p/v	3 months	+				
15774	55	<500	illiterate	postmenopausal	P4L4	discharge p/v	6 months					
16978	36	1000-1500	illiterate	menstruating	nullipara	mass	24 months				+	
15760	73	<500	illiterate	postmenopausal	P8L6	mass	12 months		+			
24806	32	1500-2000	HSc	menstruating	P2L2	discharge p/v	10 months					
10977	65	<500	illiterate	menstruating	P7L3	mass	4 months		+			
15462	72	<500	illiterate	postmenopausal	P4L3	discharge p/v	4 months	+	+			CA CERVIX

IP/OP NO	H/O STI	SEX H/O	SMOK	TOB	CLINICAL SIGNS	INVESTIGATION	HPE REPORT	TREATMENT
11543				+	mass	blood sugar	bartholin's cyst/abscess	incision&drainage
11673					discoloration	biopsy	leucoplakia SSH	steroids
11383					mass	routine blood	vulvar hematoma	evacuation
10437		premarital			discoloration	biopsy	leucoplakia SSH	steroids
22082					discoloration	KOH mount	vulvar candidiasis	antifungals
13209		premarital			discoloration	biopsy	leucoplakia SSH	steroids
21074					discoloration	KOH mount	vulvar candidiasis	antifungals
16612				+	mass	biopsy	well diff sq cell ca STAGE II	radiotherapy
22832					discoloration	KOH mount	vulvar candidiasis	antifungals
14213		premarital		+	discoloration	biopsy	leucoplakia SSH	steroids
26842					discoloration	KOH mount	vulvar candidiasis	antifungals
26821					discoloration	KOH mount	vulvar candidiasis	antifungals
15774	+				discoloration	biopsy	leucoplakia SSH	steroids
16978		extramarital	+		mass	biopsy	well diff sq cell ca STAGE III	surgery+RT
15760				+	mass	biopsy	well diff sq cell ca STAGE II	surgery only
24806	+				discoloration	KOH mount	vulvar candidiasis	antifungals
10977				+	mass	biopsy	verrucous well diff sq cell STAGE II	surgery only
15462	+			+	discoloration	biopsy	leucoplakia SSH	steroids

IP/OP NO	AGE	SES monthly	EDN STATUS	MENSTRUAL St.	PARITY	COMPLAINTS	DURATION	DM	HT	OB	HIV +	OTHERS
28802	31	1500-2000	graduate	menstruating	P2L2	pruritus	6 months					
24621	48	1000-1500	upto 10 th	postmenopausal	P3L3	pruritus	3 months	+	+	+		
8556	48	500-1000	illiterate	postmenopausal	P1L1	mass	12 months					CA CERVIX
18467	37	> 2000	graduate	menstruating	P2L2	mass	96 months					
20382	62	<500	upto 10th	postmenopausal	P1L1	discharge p/v	12 months	+				
10824	55	500-1000	upto 10 th	postmenopausal	P4L4	pain	1 month					CA CERVIX
21086	53	500-1000	illiterate	postmenopausal	P3L3	pruritus	6 months	+	+	+		
28155	70	<500	illiterate	postmenopausal	P6L6	mass	0.33 months	+				
21072	54	1000-1500	upto 10 th	postmenopausal	P3L3	pruritus	4 months					
26234	44	1000-1500	upto 10 th	menstruating	P2L2	discharge p/v	2 months					
24682	50	500-1000	upto 10 th	menstruating	P2L2	pruritus	3 months					
11581	70	< 500	illiterate	postmenopausal	P6L5	mass	12 months		+			
29256	69	<500	illiterate	postmenopausal	P4L4	pruritus	12 months	+		+		
20826	66	<500	illiterate	postmenopausal	P8L6	mass	24 months	+				UV PROLAPSE
7682	40	1000-1500	HSc	menstruating	P2L2	discharge p/v	6 months	+		+		
26381	53	1000-1500	illiterate	postmenopausal	P6L6	pruritus	12 months	+				
18245	38	1000-1500	upto 10 th	menstruating	P2L2	discharge p/v	12 months					
29517	47	1000-1500	illiterate	postmenopausal	P2L1	mass	12 months					
23928	33	1000-1500	upto 10th	menstruating	P2L2	mass	12 months					

IP/OP NO	H/O STI	SEX H/O	SMOK	TOB	CLINICAL SIGNS	INVESTIGATION	HPE REPORT	TREATMENT
28802	+				discoloration	KOH mount	vulvar candidiasis	antifungals
24621	+			+	discoloration	KOH mount	vulvar candidiasis	antifungals
8556				+	mass	routine blood	lymphedema vulva	observation
18467					mass	routine blood	leiomyoma	excision
20382				+	discoloration	biopsy	leucoplakia SSH	steroids
10824					ulcer	routine blood	post RT skin necrosis	antibiotics,analgesics
21086			+		discoloration	biopsy	lichen simplex chronicus	steroids
28155				+	mass	blood sugar	bartholin's cyst/abscess	incision&drainage
21072					discoloration	biopsy	leucoplakia SSH	steroids
26234	+				discoloration	KOH mount	vulvar candidiasis	antifungals
24682					discoloration	biopsy	leucoplakia SSH	steroids
11581				+	ulcer	biopsy	poorly diff sq cell ca STAGE III	radiotherapy
29256				+	discoloration	biopsy	leucoplakia SSH mild dysplasia	steroids
20826				+	mass	biopsy	poorly diff sq cell ca STAGE III	lost to follow up
7682	+				discoloration	KOH mount	vulvar candidiasis	antifungals
26381					discoloration	biopsy	leucoplakia SSH	steroids
18245	+				discoloration	KOH mount	vulvar candidiasis	antifungals
29517					discoloration	biopsy	leucoplakia SSH moderate dysplasia	simple vulvectomy
23928					mass	biopsy	vulvar warts	observation,follow up

IP/OP NO	AGE	SES monthly	EDN STATUS	MENSTRUAL St.	PARITY	COMPLAINTS	DURATION	DM	HT	OB	HIV +	OTHERS
22998	37	1000-1500	upto 10th	menstruating	P2L2	mass	6 months					
21862	36	1000-1500	upto 10th	menstruating	P3L3	discharge p/v	3 months					
20461	45	1000-1500	upto 10th	menstruating	P3L3	mass	0.25 months					
24601	31	1000-1500	HSc	menstruating	P1L1	pruritus	0.75 months					
22943	41	1500-2000	upto 10th	menstruating	P2L2A1	discharge p/v	4 months	+				
23841	43	1000-1500	HSc	menstruating	P2L2	pruritus	12 months					
21208	58	1000-1500	illiterate	postmenopausal	P5L4A2	pruritus	12 months	+	+			
16050	30	>2000	graduate	menstruating	P2L2	pain	0.25 months	+				
24962	60	1000-1500	illiterate	postmenopausal	P3L3	pruritus	12 months	+				
23821	32	1500-2000	upto 10th	menstruating	P2L2	pruritus	6months					
30213	58	500-1000	upto 10th	postmenopausal	P4L4	pruritus	6 months	+		+		
24682	36	1500-2000	HSc	menstruating	P2L2	discharge p/v	6 months					
26684	38	1500-2000	Upto 10 th	menstruating	P3L3	discharge p/v	12 months					
28213	53	1000-1500	illiterate	postmenopausal	P4L4	pruritus	24 months	+		+		
22103	68	500-1000	illiterate	postmenopausal	P3L3	pruritus	12 months	+				
26824	56	<500	upto 10 th	postmenopausal	P6L3	mass	24 months					
18024	32	<500	HSc	menstruating	P2L2	pruritus	6 months					
28468	60	500-1000	illiterate	postmenopausal	P5L4	mass	6 months		+			
28461	52	1000-1500	illiterate	menstruating	P3L3	discharge p/v	3 months	+	+	+		
30483	45	500-1000	illiterate	postmenopausal	P6L6	mass	12 months					

IP/OP NO	H/O STI	SEX H/O	SMOK	TOB	CLINICAL SIGNS	INVESTIGATION	HPE REPORT	TREATMENT
22998					mass	biopsy	mucous cyst	excision
21862	+				discoloration	KOH mount	vulvar candidiasis	antifungals
20461	+				mass	blood sugar	bartholin's cyst/abscess	incision&drainage
24601					discoloration	KOH mount	tinea cruris	antifungals
22943					discoloration	KOH mount	vulvar candidiasis	antifungals
23841		premarital			discoloration	biopsy	leucoplakia SSH	steroids
21208		premarital	+		discoloration	biopsy	leucoplakia SSH	steroids
16050					mass	biopsy	bartholin's cyst/abscess	incision&drainage
24962				+	discoloration	biopsy	leucoplakia SSH	steroids
23821	+				discoloration	KOH mount	tinea cruris	antifungals
30213					discoloration	biopsy	leucoplakia SSH	steroids
24682					discoloration	KOH mount	vulvar candidiasis	antifungals
26684	+				discoloration	KOH mount	vulvar candidiasis	antifungals
28213	+				discoloration	KOH mount	vulvar candidiasis	antifungals
22103				+	mass	biopsy	VIN III	wide local excision
26824					mass	routine blood	vulvar lipoma	excision
18024	+				discoloration	KOH mount	vulvar candidiasis	antifungals
28468				+	mass	biopsy	VIN III	wide local excision
28461	+				discoloration	KOH mount	vulvar candidiasis	antifungals
30483				+	ulcer	biopsy	poorly diff sq cell ca STAGE III	radiotherapy

IP/OP NO	AGE	SES monthly	EDN STATUS	MENSTRUAL St.	PARITY	COMPLAINTS	DURATION	DM	HT	OB	HIV +	OTHERS
31513	38	1000-1500	upto 10 th	menstruating	P2L2	pruritus	1,5 months	+		+		
27347	37	1000-1500	illiterate	menstruating	P2L2	mass	0.25 months	+		+		
30102	35	1500-2000	graduate	menstruating	P3L2A1	pruritus	12 months	+		+		
29633	37	1000-1500	illiterate	menstruating	nullipara	mass	24 months				+	
21386	48	1000-1500	illiterate	postmenopausal	P3L3	pruritus	8 Months					
28543	33	1500-2000	graduate	menstruating	P2L2	pruritus	5 months			+		
25348	54	1000-1500	illiterate	postmenopausal	P4L4	discharge p/v	24 months				+	
18439	42	1000-1500	HSc	menstruating	P2L2	pruritus	1 month					
20456	31	1500-2000	upto 10 th	menstruating	P2L1	pruritus	6 months					
15349	75	<500	illiterate	postmenopausal	P3L3	pruritus	12 months					
33038	75	<500	illiterate	postmenopausal	P2L2	mass	24 months	+	+			
31286	40	500-1000	upto 10 th	menstruating	P3L3	pruritus	12 months					
20828	32	1000-1500	HSc	menstruating	P2L2	pruritus	6 months			+		
21282	55	500-1000	upto 10 th	postmenopausal	P2L2	pruritus	12 months	+				
28145	30	1000-1500	HSc	menstruating	P2L2	pruritus	0.25 months					
20842	55	500-1000	HSc	postmenopausal	P3L3	pruritus	24 months			+		
27402	32	>2000	graduate	menstruating	P2L2A1	pruritus	1,5 months					
14387	45	1000-1500	upto 10th	menstruating	P3L3	pruritus	3 months				+	
18692	40	500-1000	upto 10 th	menstruating	P2L2A2	pruritus	12 months	+		+		
19806	58	500-1000	illiterate	postmenopausal	P4L3	pruritus	12 months					

IP/OP NO	H/O STI	SEX H/O	SMOK	TOB	CLINICAL SIGNS	INVESTIGATION	HPE REPORT	TREATMENT
31513	+				discoloration	KOH mount	vulvar candidiasis	antifungals
27347					mass	blood sugar	bartholin's cyst/abscess	incision&drainage
30102	+				discoloration	KOH mount	vulvar candidiasis	antifungals
29633	+	premarital			mass	biopsy	well diff sq cell ca STAGE IV	surgery+RT
21386					discoloration	biopsy	lichen sclerosus	steroids
28543	+	extamarital			discoloration	KOH mount	vulvar candidiasis	antifungals
25348		premarital			discoloration	biopsy	leucoplakia SSH mild dysplasia	steroids
18439	+				discoloration	KOH mount	vulvar candidiasis	antifungals
20456	+				discoloration	KOH mount	vulvar candidiasis	antifungals
15349					discoloration	biopsy	leucoplakia SSH	steroids
33038				+	mass	biopsy	poorly diff sq cell ca STAGE III	radiotherapy
31286					discoloration	biopsy	leucoplakia SSH	steroids
20828					discoloration	KOH mount	tinea cruris	antifungals
21282					discoloration	biopsy	lichen sclerosus	steroids
28145					discoloration	KOH mount	vulvar candidiasis	antifungals
20842				+	discoloration	biopsy	lichen simplex chronicus	steroids
27402	+				discoloration	KOH mount	vulvar candidiasis	antifungals
14387	+	extramarital			discoloration	KOH mount	vulvar candidiasis	antifungals
18692	+				discoloration	KOH mount	vulvar candidiasis	antifungals
19806				+	discoloration	biopsy	lichen simplex chronicus	steroids

IP/OP NO	AGE	SES monthly	EDN STATUS	MENSTRUAL St.	PARITY	COMPLAINTS	DURATION	DM	HT	OB	HIV +	OTHERS
16382	38	1500-2000	upto 10th	menstruating	P2L2	pain	0.25 months	+		+		
23862	48	500-1000	upto 10 th	postmenopausal	P3L3	pruritus	24 months	+				
19842	46	500-1000	HSc	menstruating	P2L2	pain	10 months					
21382	40	1500-2000	upto 10th	menstruating	P2L2	pruritus	6 months					
18676	46	1000-1500	HSc	menstruating	P2L2	pruritus	6months	+		+		
19962	52	500-1000	upto 10th	postmenopausal	P3L3	pruritus	12 months					
20143	37	500-1000	HSc	menstruating	P2L2	pruritus	10 months					
20281	48	1000-1500	HSc	postmenopausal	P3L3	pain	0.25 months	+		+		
23824	38	1500-2000	HSc	menstruating	P2L2	discharge p/v	4 months			+		
15205	40	1000-1500	upto 10 th	menstruating	P2L2	pruritus	12 months					
20695	47	>2000	graduate	menstruating	P3L3	pruritus	12 months					
28629	47	500-1000	illiterate	postmenopausal	nullipara	mass	36 months					

IP/OP NO	H/O STI	SEX H/O	SMOK	TOB	CLINICAL SIGNS	INVESTIGATION	HPE REPORT	TREATMENT
16382					mass	blood sugar	bartholin's cyst/abscess	incision&drainage
23862					discoloration	biopsy	lichen sclerosus	simple vulvectomy
19842					discoloration	biopsy	lichen sclerosus	steroids
21382					discoloration	biopsy	leucoplakia SSH	steroids
18676	+				discoloration	KOH mount	vulvar candidiasis	antifungals
19962					discoloration	biopsy	lichen sclerosus	steroids
20143	+				discoloration	biopsy	lichen sclerosus	steroids
20281					mass	blood sugar	bartholin's cyst/abscess	incision&drainage
23824					discoloration	KOH mount	vulvar candidiasis	antifungals
15205	+				discoloration	biopsy	leucoplakia SSH	steroids
20695	+	premarital			discoloration	biopsy	leucoplakia SSH	steroids
28629	+	extramarital		+	ulcer	biopsy	poorly diff sq cell ca STAGE IV	surgery+RT

KEY TO MASTER CHART

IP/OP NO	:	inpatient /outpatient number
AGE	:	Age in years
SES status	:	Socio-economic status (monthly income in rupees)
EDN status	:	Educational status
HSc	:	Higher secondary schooling
H/O STI	:	History of sexually transmitted infections
HPE report	:	Histo-pathological report
RT	:	Radiotherapy
SSH	:	Simple squamous hyperplasia
DM	:	Diabetes Mellitus
HT	:	Hypertension
OB	:	Obesity
Sex H/O	:	Sexual History of Promiscuity
SMOK	:	History of Smoking
TOB	:	Tobacco Abuse